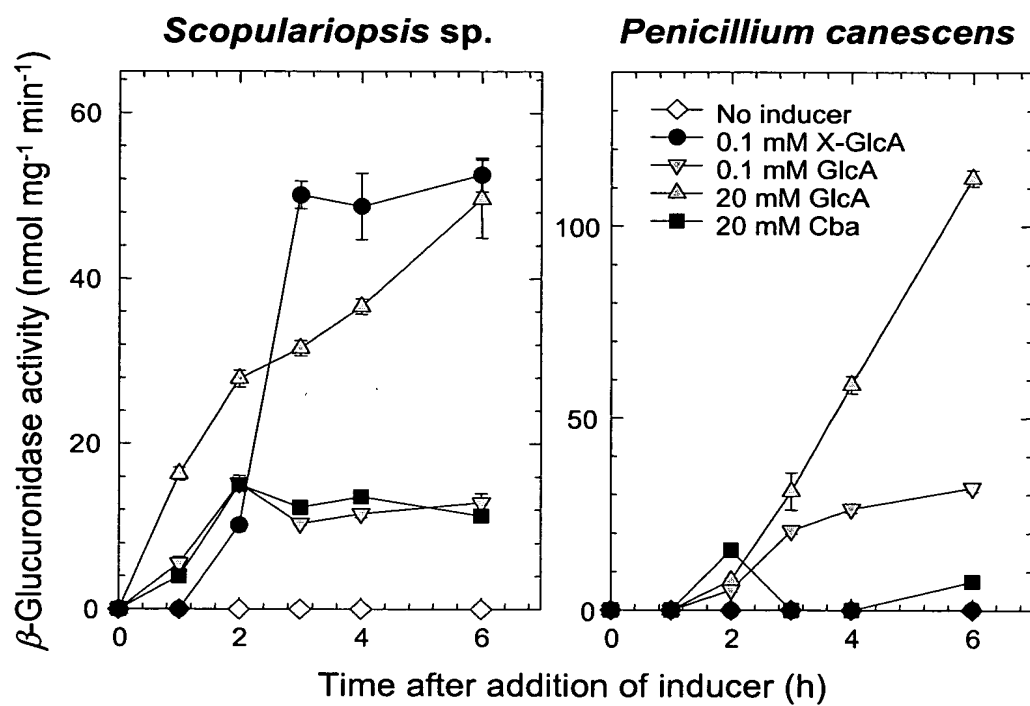


Figure 1



Socpulariopsis sp. isolate RP38.3

	(dA) ²²
1	GATATTGAGA GCAC ^{TTTTTCT} CTTGTATGTG GATGAGGAAG GCGACGAAA TGAAAAAAAAA AAAAAAAAAAAAA
71	AAAGCCCGA GTTGACA ^{AAC} CCTGGCCTCG GCTTACCATA CACTAAAGTG ATAGATCTGG ATGTCACATT
141	ATACGTGACG ATCTCCGGGG TCTATTCCGC TGTTCATTAC CATTCAGTCG GAAAAGTCTG GTGCACTGGC
	(dA) ⁸
211	CTTGCGAACA AAAAAAATGC TGTCTGTGTG TACCCGACTA CCATGCTTCT ACTCATTTT CGGCGATTTC
281	GGAAATCCAGT ATCGGGGGAC GGACTGTAAG TTGTAAGAAA GTTCTGACAA ATACAGAAAAA TCCTGGGGAGT
351	GGAAAGTTCAA TTGAATGTGG AGAAGAAATG CGAGTGTCCA GATGGGGGAA TCTTGTAGAC TCTGCAAAAGA
421	GCAGAAAGTGC GGA ^{AAACACG} GAGAAGAGGA GGGCGGAGAC TCGGGATAAG ACA ^{AAAGGTA} AGTGATCTTC
491	GAGGTGTGTC TATTCCGGGAA TAGTGTACAT CATAGGCCGAC CTCATAGGGA AACCA ^{CCGAG} TCAAACCCAT
	TATABox (dA) ¹⁰ →
561	GACTATATGA AGGAGCGACG ATCTCGAAAA AAAAAAGAGA AGAGCACAA ^C ACCTCCAGCC AGAGCAACCT
	M R L S N I P L L R P W A A L
631	GAGCCGTCAA CTCCCCTGCTT GTCCATCATG CGCCTCTCTA ATATCCCCCT TCTGCGCCCT TGGCGCGCTC
	S L A T L I G L S S G A D T D Q W K T L K P Q
701	TGTCCCTAGC CACCCTCATC GGCCTGTCTT CTGGTGCCGA CACTGACCAA TGGAAGACGC TCAAGCCCCA
	A N A I R E L L S L D G T W N F A L P Q S R E
771	AGCTAATGCT ATTCGGGAGC TACTCTCCCT TGATGGTACC TGGAAC ^{TTTG} CCCTCCCGCA ATCACGCGAA
	I E E D Q G W T S V I P P K L Q I P V P A S Y N
841	ATTGAGGAAG ACCAGGGCTG GACTAGCGTT ATTCCACCCA AA ^{CTGCAA} T CCCAGTGCCT GCCAGCTACA
	D I F T D P A I R N N V G W A Y Y Q R H A I V
911	ACGACATCTT CACCGATCCG GCGATCCGGA ACAACGTTGG CTGGGCATAC TATCAGCGCC ACGCCATTGT
	P Q T W S E G R Y Y V R F D S V T H E A K V Y
981	CCCCAGACC TGGTCTGAGG GACGCTACTA TGTTCGCTTC GACTCTGTTA CGCACGAGGC CAAGGTCTAC
	V N D E E V G G H V G G Y T P F E V D L T D L V
1051	GTCAACGACG AGGAAGTCGG AGGCCATGTC GGTGGATATA CTCCCTTCGA GGTGACCTG ACCGACCTTG

Figure 2B

1121	S P G E Q F R L T V A V N N I L T W Q T I P P
	TGTCGCCCGG AGAGCAGTTC CGCCTGACTG TTGCTGTCAA CAATATCCTG ACTTGGCAGA CCATCCCCC
1191	G E V V T N E A G K L R Q D Y N H D F Y N Y A
	TGGTCAGGTC GTGACCAACG AGCTGGTAA GCTTCGACAG GACTACAACC ACGACTTCTA CAACTACGCT
1261	G I A R S V S L Y S V P D V H V S D V T V T T E
	GGAATTGCAC GTTCGGTCTC GCTATACTCC GTGCCTGATG TTCATGTTAG CGACGTCACT GTTACTACCG
1331	N D D E G N E G T V N Y S V E T S G S N D T Q
	AGAACGACGA CGAGGGCAAC GAGGGCACCG TCAACTACTC TGTCGAGACC AGCGGTCTA ACGACACTCA
1401	A R V T L I D E D G N E V A E A S E L E G S L
	GGCTAGGGTC ACTTTGATTG ATGAGGACCG CAACGAGGTC GCCGAGGCAT CGGAGCTGGA GGGGAGCTTG
1471	N V S P V N L W Q P G A A Y L Y T L R V E L L S
	AACGTGAGCC CCGTGAATCT CTGGCAGCCG GGGCGGCGT ACCTCTACAC TCTTCGCGTT GAACTCCTTT
1541	D D T V V D T Y D L P V G V R S V R V E G N Q
	CGGACGATAC CGTCGTCGAC ACTTATGATT TACCGGTTGG TGTACGGTCC GTTAGGGTTG AAGGAAACCA
1611	F L I N G K P F Y F T G F G K H E D S P V R G
	GTTCCTCATC AACGGCAAGC CCTTCTACTT CACCGGCTTT GGCAAGCACG AGGACAGCCC CGTCCGCGGA
1681	K G Y D P A Y M I H D F E L M K W M G A N S F R
	AAGGGCTACG ACCCGGCCCTA CATGATCCAT GATTTTGAGC TCATGAAGTG GATGGGCGCC AACTCCTTCC
1751	T S H Y P Y A E E V M E Y A D R H G I V V I D
	GGACCTCCCA CTACCCCTAC GCCGAGGAGG TCATGGAGTA CGCCGACCGT CACGGCATCG TCGTCATCGA
1821	E V A A V G L N L G I S A G L R G D E P P K T
	CGAGGTCGCC GCCGTCGGTC TGAACCTGGG CATCAGCGCA GGCCTCAGG GAGATGAGCC GCCCAAGACC
1891	F T E D K V N N E T Q K T H A Q A L R E L I H R
	TTCACGGAGG ACAAGGTTAA CAACGAGACG CAAAGACAC ACGCCCAGGC CCTCCGTGAG TTGATCCACC
1961	D K N H A S V V S W C V T N E P A S A E D G A
	GTGACAAGAA CCACGCCCTCC GTTGTACAGT GGTGCGTCAC CAACGAGCCC GCCTCCGCCG AGGACGGTGC
2031	R E Y F Q P L V E L T R E L D P T R P V T F T
	CCGCGAGTAC TTCCAGCCCC TGGTCGAGCT AACCCGCGAG CTGGACCCCA CCGGCCCGCT CACCTTCACC
2101	N V M G A T V D K C L I S D L F D F L S L N R Y
	AACGTCATGG GCGCCACCGT CGACAAGTGC CTCATCTCCG ATCTTTTTCGA CTTCCTTTCT CTCAACCGCT

Figure 2C

2171	Y G W Y V Q T G D L E S A E V A M E E L L Q	ACTACGGGTG GTACGTCCAA ACGGCGGACC TGGAGTCCGC CGAGGTCGCC ATGGAGGAGG AGCTCCTCCA
2241	W V D E Y D K P I I M S E Y G A D T L A G L H	GTGGGTCGAC GAGTATGACA AGCCTATCAT CATGTCCGAG TACGGGCGCG ACACCCTGGC CGGTCTCCAC
2311	A V D E V L W S E E Y Q T N L L R M S H K V F D	GCGGTCGACG AGGTGCTCTG GTCCGAGGAG TACCAGACCA ACCTCCTGCG CATGTGCGAC AAGTCTTTG
2381	S I D S I V G E H V W N F A D F Q T P H T G V	ACAGCATTGA CTCATTGTT GCGAGCACG TGTGGAACCT TGCTGATTC CAGACTCCTC ATACTGGTGT
2451	N R V D G N K K G V F T R E R R P K A A A H E	CAACCGTGTT GATGGAACA AGAAGGTGT GTTTACGCGT GAGCGGAGGC CTAAGGCCGC GGCACATGAG
2521	L K R R W L D E G F P K L G N G T S G A *	CTCAAGAGGC GTGGCTGGA CGAGGGGTTT CCGAAGCTGG GGAACGGTAC TTCCGGTGCT TAAGTGGAGC
2591	ACGGGTATGA TAGGGTTTAA CTGCCAAGAT ACATAGGCA GAGGTTTAG TGACATACAC CTGTTGAGAT	
2661	CTGGAATTGA CGCCGTATGA ATTGCTTGAT GACTTTATGC CAAGGACTTG TTGCGCATCT AATACTTTGT	
2731	AGAAAGCTAG TCGCTGCCGT GATTGCCAAG GGGGCTTTAA GTCACCCCAAC CTGGATCAAA GACATTATTC	
2801	CACTATATCA CAACTTCATG AGTACGAGTG GGGATTGAAA GCAAACGGTC GCGGACTCTA CTCGGCAGCC	
2871	GCGACTTCGG GCCAAGTTTG AGAAAAGGC CATGTTTCGA GGTATGATT CGGAAAGTCTA TACATTAAATA	
2941	CAAGGTGCCC TGCTCTGTTA AACCCCTCT CACTCGCTTT TTAAAGACGC ACAGGGCCAT TTTGTGCCCT	
3011	TAACTCTGAA GACGTTGTTA GAATAAAAGT GGTGGAGCCA GTCGCCCTACG CCTAGTTGGC CAGTTCTCCA	
3081	GTTCTCCACT TGCAAGCTAA TCCTGAGGAA AAGCTTGACG CGGTGAAACG CCGTTCCGTT CTGCGTGAGG	
3151	TTTAGTATCC TAACTAAGCA CGTACGGTAA AATCTCGGC GTGCCGTGCC ACCTTGTTTG GATCGTCACG	
3221	AACTCGTAAA ATCCCGCACT TGATTTTACT TAAACGAGA CCTTTTACAT TCTGGAGTTG ATACCCCGGC	
3291	GTATCCGCCA ACGTCGTNCN NNNCTTTTGN CCCTCATACA GGGCCGTTAC AAGCC	

Poly(da) signal Poly(da) site

Figure 3A

***Penicillium canescens* isolate RPK**

1	GCCAAAGCTCA	TCAGTCACCG	ATGAAAAACT	ACTCAATTGC	CGATGCATCG	TCTGGGAAAC	TATATAAATG
				TATA box		TATA box	
71	CCTAAGTGCA	GCCAGATATA	ATACCCTCAT	CAACTTATAC	TAATTATTAA	AATAAACAGT	GGCTTTGTTA
		→	M K F L T G L S L L S L A G P S				
141	ATTACCCCTTT	AATAAAGCGG	CAATGAAATT	CCTTACGGGA	TTGTGCGTGC	TGTCTCTTGC	TGGTCCATCG
	L G T P A A R H F P R N E M T Q H E Q P L I K V						
211	TTGGGTACAC	CTGCAGCTCG	GCACTTTCCA	CGCAATGAAA	TGACCCCAACA	TGAACAGCCC	TTGATCAAAG
	R P Q R T S S R E L V N L D G L W K F A L A S						
281	TCAGGCCCCA	ACGAACTTCA	TCTCGAGAGC	TTGTGAACCT	TGATGGTCTA	TGAAATTCG	CCCTCGCATC
	G L N D T A Q P W T A P L P K G L E C P V P A						
351	TGGCCTCAAT	GACACGGCCC	AACCGTGGAC	AGCGCCATTA	CCCAAAGGTC	TTGAATGTCC	AGTCCCGGCC
	S Y N D I F I S R E I H D H V G W V Y Y Q R E V						
421	TCTTACAACG	ACATCTTTCAT	CAGCCGGGAG	ATTACACGACC	ATGTGGGATG	GGTTACTAT	CAGCGTGAGG
	I V P K G W S Q E R Y L V R A E S A T H H G R						
491	TCATTGTCCC	CAAAGGCTGG	TCTCAGGAGC	GATATCTCGT	GCGAGCCGAA	TCCGCTACGC	ACCATGGTCG
	I Y V N N R L V A E H V G X Y T P F E A D V T						
561	CATCTATGTC	AACAACCGGC	TTGTTGCCGA	GCATGTGGGC	NGCTATACAC	CTTTTGAAGC	GGACGTCACCT
	E L V A P G E K F R L T I G V N N E L T H E T I						
631	GAATTAGTCG	CCCCCGGAGA	GAAATTTCGC	TTGACGATTG	GTGTCAACAA	CGAGCTTACC	CATGAGACTA
	P P G K I T T G N A T G K R I Q T Y Q H D F Y						
701	TCCCACCTGG	AAAAATCAGC	ACAGGGAACG	CGACTGGCAA	GAGAATCCAG	ACCTATCAAC	ATGACTTTTA
	N Y A G L A R S I W L Y S V P Q Q H I Q D I T						
771	CAACTATGCT	GGTCTCGCCC	GATCTATCTG	GCTTTATTCT	GTACCCCCAGC	AACATATCCA	GGATATTACT
	V V T D V D G D N G L I N Y E V E V A N Q T T G						
841	GTGGTTACAG	ATGTTGATGG	TGACAATGGT	CTGATTAACT	ACGAGGTCTGA	AGTGGCGAAC	CAGACGACGG

Figure 3B

911	Q I Q I S V I D E D G A I V A K A S G A Q G T
	GGCAGATCCA GATCTCAGTG ATCGACGAGG ATGGAGCTAT TGTTGCAAG GCCTCGGGAG CTCAGGGTAC
981	V T I P S V K L W Q P G A A Y L Y Q L Q V N I
	TGTCACAATT CCCTCAGTCA AGCTATGGCA ACCTGGGCC GCATATCTCT ACCAACTCCA GGTCAACATC
1051	V G S S G D V V D T Y N L A T G V R T V K V A G
	GTGGTTCTA GCGGCGATGT AGTCGACACC TACAATTTGG CTACGGGCGT GCGTACTGTC AAGTTGCCG
1121	S Q F L I N G K P F Y F T G F G K H E D T A V
	GGTCACAATT CTTAATAAAT GGAAGCCTT TCTACTTTAC CGGTTTGGC AAACATGAAG ACACAGCAGT
1191	R G K G H D P A Y M V H D F Q L M K W I G A N
	ACGTGGCAAA GGACATGACC CAGCATACAT GGTTCACGAT TTCCAACCTCA TGAAATGGAT TGGAGCAAAAT
1261	S F R T S H Y P Y A E E V M D F A D R N G I V V
	TCTTTTCGGA CTTCACACTA TCCTTACGCG GAAGAGGTCA TGGATTTCGC AGATCGAAAT GGAATTGTCTG
1331	I D E T P A V G L N I A L M G V S E S G A P Q
	TGATCGATGA AACACCTGCC GTTGGTCTGA ACATTGCCCTT GAIGGGCGTA TCTGAGAGTG GTGCCCCACA
1401	T F T P D A I N D K T Q E A H K Q A I R E L I
	AACATTTTACG CCAGATGCGA TTAACGATAA AACCCAAGAG GCCCACAAGC AGCGATTCTG TGAGCTCATTT
1471	A R D K N H A S V V M W S I A N E P A S H E D G
	GCCCGAGACA AAAACCATGC CAGTGTGTC ATGTGGTCTA TTGCCAACGA GCCCGCATCT CATGAAGATG
1541	A R E Y F E P L T N L T R Q L D P T R P I T F
	GAGCTCGCA ATACTTCGAG CCACTGACCA ATTTGACTCG TCAACTTGAT CCAACTCGCC CTATTACATT
1611	A N V G T A T Y Q L D R I S D L F D V S C I N
	TGCTAACGTC GGCACGGCGA CATATCAGCT GGATCGGATC TCTGATCTGT TTGATGTCAG TTGCATAAAT
1681	R Y F G W Y S Q T G D L E E A E A A L E K E L H
	CGGTATTTCG GATGGTATTC TCAAACAGGA GACCTTGAGG AAGCAGAGGC AGCTCTTGAA AAGGAGCTGC
1751	G W Q E K F H R P I V M T E Y G A D T L A G L
	ATGGATGGCA AGAGAAATTC CACAGGCCGA TCGTCATGAC CGAATATGTT GCAGATACCC TTGCAGGCCT
1821	H S I L G L P W S E E F Q V Q M L D M Y H R V
	TCACTCTATC CTCGGACTGC CTTGGAGCGA AGAGTTCCAA GTACAAATGC TAGACATGTA CCATCGAGTG
1891	F D R I E S M A G E H V W N F A D F Q T N L G I
	TTTGATCGCA TTGAGTCGAT GGCAGGCGAG CATGTTTGA ACTTCGCCGA TTTCCAGACC AACTTGGGTA

Figure 3C

	I	R	V	D	G	N	K	K	G	V	F	T	R	D	R	K	P	K	A	A	A	H	S	
1961	TCATCCGAGT	AGACGGTAAC	AAGAAGGGTG	TTTTCACCCG	TGACCGAAAG	CCAAAGGCGG	CAGCTCATAG																	
	L	R	A	R	W	T	S	I	D	K	N	*												
2031	TTTGAGGGCA	AGGTGGACTA	GTATTGATAA	GAATTAAGGA	ATTGACATAC	TGCCAAATAC	AAATGTTTGG																	
2101	CCTCACATTA	CAAAACTATA	TGCAATTAAA	TGTACTGAAG	ATTGAGGGG	TCGACCACTG	ACAATGGAAC																	
2171	AAAATGTGCT	TAAACAGACGT	AAGTCTGGAT	TCTACTTGAA	CAGACGTAAG	TCTGGATTCT	ACTTGATTGG																	
2241	ACTGCTTGTC	ATATGTTCCA	AATCGTATCG	TAAACATTAT	TGAAAATGGC	CAGGAGACAG	CGTGGAAAAGA																	
2311	AAGGACAACA	GTCTGGAAGA	CAAGTTCGGA	TGCGCGGATT	CCTCGAAGCT	CCCTTGCAA	AACTCATTAC																	
2381	TGGGCCCCTC	CATACAACAT	TAAGCGCTAT	CATGATCTTC	TCTACAAAGG	GCCTCTGCCC	AGGTGGACTG																	
								Poly(da) signal																
2451	CCTTCTCTGA	GGATGTGGAG	CGGGTCTACT	TCCATCAAGT	CCTCATCAAT	AGAGCTATAT	ACGATATTGG																	
								Poly(da) site																
2521	ACGAGCGGCA	GAAGGCAACG	AGACAATCAA	CGAGTTCGTG	GCTGTAGTCC	AAGAGTCTGT	CGGCGTTTCAG																	
2591	AGCTGTTTCA	TGCACTCAAT	CGGAACGG																					

Figure 4A

***Penicillium canescens* strain DSM1215**

MetLysPheLeuThrArgLeuSerLeuLeuSerLeuAlaAlaPro
ATGAAATTTCTTACGCGATTGTCGCTGCTATCTCTTGCTGCTCCA

SerLeuGlyThrProAlaAlaArgHisPheProArgAsnGluMet
TCGTTGGGTACACCTGCAGCTCGGCACTTTCCACGCAATGAAATG

XaaGlnAsnGleGlnProLeuIleLysIleArgProGlnArgThr
ATCCAAAATGAACAGCCCTTGATCAAAATCAGGCCCAACGAACT

SerSerArgAspLeuValAsnLeuAspGlyLeuTrpLysPheAla
TCATCTCGAGACCTTGTGAACCTTGATGGTCTATGGAAATTGCGC

LeuAlaSerGlyProAsnAspThrAlaGlnProTrpThrAlaPro
CTCGCATCTGGCCCAATGACACGGCCCAGCCGTGGACAGCGCCA

LeuProLysGlyLeuGluCysProValProAlaSerTyrAsnAsp
TTACCCAAAGGTCTTGAATGTCCAGTCCCGGCCTCTTACAATGAC

IlePheIleSerArgGluIleHisAspHisValGlyTrpValTyr
ATTTTCATCAGCCGGGAGATCCACGACCATGTGGGATGGGTTTAC

TyrGlnArgGluValIleValProLysGlyTrpSerGlnGluArg
TATCAGCGTGAGGTCATTGTCCCCAAAGGCTGGTCTCAGGAGCGA

TyrLeuValArgAlaGluSerAlaThrHisHisGlyArgIleTyr
TATCTTGTGCGAGCCGAATCCGCTACACACCATGGTTCGCATCTAT

ValAsnAsnArgLeuValAlaGluHisValGlyGlyTyrThrPro
GTCAACAACCGGCTTGTGTGCGGAGCATGTGGGCGGCTATACACCT

PheGluAlaAspIleThrAspLeuValValProGlyGluLysPhe
TTTGAAGCCGACATCACTGATTTGGTCGTCCCTGGAGAGAAATTT

ArgLeuThrIleGlyValAsnAsnGluLeuThrHisGluThrIle
CGTTTGACGATTGGTGTCAACAACGAGCTTACCCATGAGACTATC

ProProGlyGluIleThrThrAlaAsnAlaThrGlyLysArgIle
CCACCAGGAGAAATCACAACAGCGAACGCGACTGGCAAGAGAATC

GlnThrTyrGlnHisAspPheTyrAsnTyrAlaGlyLeuAlaArg
CAGACCTATCAACATGACTTTTACAACATATGCCGGTCTCGCCCGA

SerIleTrpLeuTyrSerValProGlnGlnHisIleGlnAspIle
TCTATCTGGCTTTATTCTGTACCCAGCAACATATCCAGGATATT

Figure 4B

ThrValValThrAspValAspGlyAspAsnGlyLeuIleAsnTyr
ACTGTGGTTACAGATGTTGATGGTGACAATGGTCTGATCAACTAC

GluValGluValAlaAsnGlnThrThrGlyGlnIleGlnIleSer
GAGGTCTGAAGTGGCGAACCAGACGACGGGGCAGATCCAGATCTCA

ValIleAspGluAspGlyAlaIleValAlaAsnAlaSerGlyAla
GTGATCGACGAGGATGGAGCTATTGTTGCAAATGCCTCGGGAGCT

GlnGlyThrValThrIleProSerValLysLeuTrpGlnProGly
CAGGGTACTGTCCAAATTCCTCAGTCAAGCTATGGCAACCTGGC

AlaAlaTyrLeuTyrGlnLeuGlnValAsnValValAspSerSer
GCCGCATATCTCTACCAACTCCAGGTCAACGTCGTGGATTCTAGC

GlyAspValValAspThrTyrAsnLeuAlaThrGlyValArgThr
GGCGATGTAGTCGACACCTATAATTTGGCTACGGGCGTGCGTACT

ValLysIleSerGlySerGlnPheLeuIleAsnGlyLysProPhe
GTCAAGATTTCCGGGTCACAATTCTTGATAAACGGCAAGCCTTTC

TyrPheThrGlyPheGlyArgHisGluAspThrAlaValArgGly
TACTTTACCGGTTTTGGCAGGCATGAAGACACAGCAGTACGTGGC

LysGlyHisAspProAlaTyrMetValHisAspPheGlnLeuMet
AAAGGACATGACCCAGCATATATGGTTCACGATTTCCAACCTCATG

LysTrpIleGlyAlaAsnSerPheArgThrSerHisXaaProTyr
AAATGGATTGGAGCAAATTCCTTCCGGACTTCACACTACCCTTAT

AlaGluGluValMetAspPheAlaAspArgAsnGlyIleValVal
GCAGAAGAGGTCATGGATTTTCGCAGATCGAAATGGAATTGTCGTG

IleAspGluThrProAlaValGlyLeuAsnIleAlaLeuMetGly
ATCGATGAAACTCCTGCCGTGGGTCTGAACATTGCCTTGATGGGT

ValSerGluSerGlyAlaProGlnThrPheThrProAspGlyIle
GTATCTGAGAGTGGTGCCCCACAAACATTTACGCCAGATGGGATT

AsnAspLysThrGlnGluAlaHisLysGlnAlaIleArgGluLeu
AACGATAAGACCCAAGAGGCCCAAAACAGGCGATTTCGTGAGCTC

IleAlaArgAspLysAsnHisAlaSerValValMetTrpSerIle
ATTGCCCCGAGACAAAACCATGCCAGTGTTGTCATGTGGTCTATT

Figure 4C

AlaAsnGluProAlaSerGlnGluAspGlyAlaArgGluTyrPhe
GCCAATGAGCCTGCATCTCAGGAAGATGGGGCTCGCGAATACTTC

GluProLeuAlaAsnLeuThrArgGlnLeuAspProThrArgPro
GAGCCACTGGCCAATTTGACTCGTCAGCTTGATCCAACCTCGCCCT

IleThrPheAlaAsnValGlyAlaAlaThrTyrGlnLeuAspArg
ATTACATTTGCTAATGTGCGCGCTGCAACATATCAGCTAGATCGG

IleSerAspLeuPheAspValSerCysIleAsnArgTyrPheGly
ATCTCTGATCTGTTTGGATGTTAGTTGCATAAATCGGTATTTCCGA

TrpTyrSerGlnThrGlyAspLeuGluGluAlaGluAlaAlaLeu
TGGTATTCTCAGACAGGAGACCTTGAGGAAGCAGAGGCAGCTCTT

GluLysGluLeuArgGlyTrpGlnGluLysPheHisArgProIle
GAAAAGGAGTTGCGTGGGTGGCAAGAGAAATTCCACAGGCCGATC

IleMetSerGluTyrGlyAlaAspThrLeuAlaGlyLeuHisSer
ATTATGAGCGAATATGGTGCAGATACCCTTGACAGGTCTTCATTCT

IleLeuAlaLeuProTrpSerGluGluPheGlnValGlnMetLeu
ATCCTCGCACTGCCTTGAGCGAAGAGTTCCAGGTACAAATGCTA

AspMetTyrHisArgValPheAspArgIleGluSerMetAlaGly
GACATGTACCATCGAGTGTTTGATCGCATTGAGTCGATGGCAGGC

GluHisValTrpAsnPheAlaAspPheGlnThrAsnLeuGlyVal
GAGCATGTTTGGAACCTTCGCGGATTTCCAGACCAACTTGGGTGTC

IleArgValAspGlyAsnLysLysGlyValPheThrArgAspArg
ATCCGAGTAGATGGTAACAAGAAGGGTGTTTTTCACGCGTGACCGA

LysProLysAlaAlaAlaHisSerLeuArgAlaArgTrpThrAsn
AAGCCAAAGGCGGCAGCTCATAGTTTGAGGGCAAGGTGGACGAAT

GlyAspLysAsn
GGTGATAAGAATTAG

Figure 5

Giberella zeae

ATGTTGCGACCACAAGCCAACAGGGCTCGCGACCTTGTGTCACTAGACGGTGTGTTGGAACCTTG
CCCTCGCCAAATCTCACGACATTGAAACTGAGCAAGCATGGAAGAAGCGAATCTCACCAGAGCT
TCAAGTACCTGTTCCAGCCAGCTACAACGACATCTTTGCTGACGAGACCATCCGCGACCACGTC
GGCTGGGTCTACTATCAGCGTCAAGCAGTTGTTCCCCGCGGTTGGGTTGCGCCTCAGCGTGTCT
TTCTACGTGTAGATGCTGCAACCCACCACGGCAGAGTTTACGTCAACGACAAGTTTGTCTCGTCA
GCATATCGGCGGCTATACACCGTTTGAGATTGAGCTTACTGGACTTGTCTGAACCGGGGTGAGAG
TTTCGTCTTACGATTGCTGTGAACAATCAACTCACATGGGAGACTATTCCGCCGGGTGCGATTG
AGGCTCAAAGTGATGGTTCGCGGAAGCAGAGCTATCAGCATGACTTTTTCAACTATGCTGGATT
GGCCCGTTCTGTGTGGCTTTACTCGGTACCAAAGGTCTTTATAAATGATATCAGCGTCGGCACA
GATCTTCTTGGGGACGGAACCGGCATTGTCTGAATTTGATATTCGGACCTCTGGTGAACCTTCAGG
CTGACGCAAGATGGCGCATCCTGCTCGACGACGAAGAGGATGCGACAGTGTGTCAAGCCCAAGA
GTCACATGGAAAACCTTGAGGTTAAAAACGCTAAATACTGGGCACCTGGTGCTGCGTACCTTTAT
CAGCTTCGGGGCTCAGCTCGTACGCGGCGAACACGACGAGATCCTCGACACATATAACCTTGCCG
TAGGCATCCGTTTCAGTCGAGATCCGAGATGGCCGCTTCTTCATCAACGGGAAGCCATTTTATTT
TACCGGCTTTGGCAAACACGAAGATGGCCCCGTCCGTGGACGCGGTTATGACGCGTCATACATG
ATACACGACTACCGTCTGATGAAGTGGATAGGAGCCAACTCTTCCGAACCTCCCACTACCCCT
ACGCAGAGGAGGTTCTGGAATATGCCGACAGACACGGCGTGGTTGTTATTAACGAAACAGCCGC
CGTTGGTCTCAACCTCAATATTGTCTCGGGTATGTTTGGCAAACAAGCAACTTGCCACATTCTCC
CCGGATACCATGAGTAGCAAAACACAGGCTTCACATGAACAAGCTATCCGTGAGCTTATCAGCC
GGGATAAGAACCACCCTTGTGTTGTGATGTGGATGCTGGCAAATGAGCCTGGGGCCAGCGAGCA
GGGAAGTCGAGAATACTTTGAACCGCTCGTTACCTTGGCGCGATCGCTGGACAGTCAGAAACGG
CCAATGTGCTACTCCACATGATCCACTCTAAGCCTGATACAGATCGCATCGCAGACCTTTTTTG
ATGTAGTCTGTATGAACCGCTACTACGGGTGGTACACGCAAACAGGAAACCTCAAAGCCGCAGA
AGTCGCCCTTGAAGCCGAGCTACGCAGTTGGCAAGAAGCCTACGCCGCCAAACCCATAATCATG
ACGGAATATGGCACCGACACAGTCGCAGGTCTGCACACCGTTTGTGATGTGCCCTGGACTGAAG
AGTACCAGGTTTCGCTTTTTGGACATGTATCACCGCGTCTTTGACCGCATTGATAATGTCGTCGG
CGAGCATGTGTGGAACCTTGTGATTTCCAGACATCGGCTATGATTATTAGGGTTGATGGGAAC
AAGAAGGGTATCTTTACTAGGGATCGCAGGCCAAAGAGTGCAGCTCATGCTTTGCGAGCGAGAT
GGACTGGGCCTGTTGGACCTCGCAAGATAGAGGTGACCAAGCAATAA

MLRPQANRARDLVSLDGVWNFALAKSHDIETEQA WKKRISP ELQVPVPASYN DIFADETIRDHV
GWVYYQRQAVVPRGWVAPQ RVFLRVDAATHHGRVYVNDKFVVEHIGGYTPFEI ELTGLVEPGSE
FRLTIAVNNQLTWETIPPGRIEAQSDGSRKQSYQHDFNYAGLARSVWLYSVPKVFINDISVGT
DLLGDGTGIVEFDIRTS GELQADARWRILLDDEEDATVCQAQESHGKLEVKNKYWAPGAAYLY
QLRAQLVRGEHDEILD TYNLAVGIRSVEIRDGRFFINGKPFYFTGFGKHEDGPVRGRGYDASYM
IHDYRLMKWIGANSFR TSHYPYAEVLEYADRHGVVINETA AVGLNLNIVSGMFGNKQLATFS
PDTMSSKTQASHEQAIRELISRDNHPCVVMWMLANEPGASEQGSREYFEPLVTLARSLDSQKR
PMCYSHMIHSPD TDRIADLFDVVCMNRYYGWYTQTGNLKAAEVALEAELRSWQEAYAAKPIIM
TEYGTDTVAGLHTVCDVPWTEEYQVRFLDMYHRVFDRIDNVVGEHVWNFADFQTSAMIIRVDGN
KKGI FTRDRRPKSAHALRARWTGPVGPRKIEVTKQ

Figure 6

Aspergillus nidulans

ATGAGGGTCTTCCAGTGTTATCTTTCTTGTCACTCGCACTCATCCCTCCCTCGCTCGGCGTCC
CGTCGCCTCAGCTCCGCGACGTCGAGCTCCCGCCAACACAACAAGCCCTAACCATCAACCTGAA
ACCCAGCAGACGTCGACGAGAGACCTCGTTTCTCTCGACGGGCTGTGGTCCTTTGGCCTCGAA
GACGCCACAAACAGCACCTCTGCTCCCTGGACGGCGGCGCTCCCAAAGGGCCTGGAATGTCCCG
TCCCTGCATCCTACAACGACATCTTCGTGACAGGACCATTACGATCACGTGGGCTGGGTATA
CTACCAACGCACTGTGACTGTCCACGGGGCTGGGCAGATCAGCGCGCTTTTCTCCGTCTGGAG
TCAGCAACGCATCATGGCCGCGTCTATGTCAATGAGCACCTGGTTGCCGAGCATGTTGGCGGTT
ACACCCCGTTTGAAGCCGACATTACCTCTCTCGTGCAGCCTGGTGAAAGCTTCCGGTTGACAAT
CGGTGTGGACAACCAGCTGACGCACGAGACCATCCCTCCAGGTGATCTGGTGACTTCTGAGTAT
ACAGGGAAGAAACAGCAGAGCTACCAGCACGACTTTTACAATTACGCAGGGCTGGCGAGGTCCA
TATGGCTCTACTCTGTGCCCAAGGATCAGTTCATCAAGGACATCACGGTCGTTCCAGATGTTGA
TTGGGATGGTGACGCAGAGACCGGAGTGGTGAGCTATACCGTCCAGACTTCTAACGCGACGAGT
GGCCCCATCCGGATCTCAATTCTCGATGAAGAAGGAAACGAGGTGCGAACAGCGTCCGGAGCCA
CTGGGACAGCTACCATTCCCTCTGTCAACCTCTGGCAGCCTGGCGCTCCCTACCTATACTCCTT
CACTGTGACGATCCTCTCCGCCTCCCAACGGCTGATCGACACATACACACTGCCCATCGGTATC
CGCACTGTGGCTGTCGGCAACGGCACTATCCTGGTCAACAATGAGCCGGTCTACCTGACCGGGT
TTGGCAAACACGAGGATAGTCCCATCCGCGGCAAAGGCCACGACATCGCGTACCTAGTCCACGA
CTTCCAGCTGCTGGACTGGATCGGCGCGAACTCTTTCGCGACCAGCCACTATCCTTACGCGGAA
GAGGTGATGGAATTTGCAGACCGCCAGGGAATTCTTGTGATTGACGAAACGCCCCGCCGTGCGAC
TGGCGTACAGCATTGGCGCGGGCATCTCAACGGACACAAGCAGGGTGACCTTCGCGCCGGACGG
GATCAACAACAATACTCGCGCAGCCACGCCCAGGCTCTCCGGGAACCTATTGCACGGGACAAG
AACCACCCAGCGTTATCATGTGGTGCATCGCGAACGAACCCGCGTCTGATGAGCCAGGTGCGC
GCGCATACTTTGAGCCCCCTACGCGGCTCGCCCCGCTCCCTCGATCCCGCGCACCGGCCATAAC
TTTCGCCAACCTCGGCCTGGCAACCTATGAAACCGACACAATCTCTGACTTGTTGATGTTCTC
TGCTTGAACCGATATTTCCGGCTGGTACTCGTACACGGGAGACCTGGAGTCCGCCGGAAGGCAC
TCCATGAGGAACTGGACGGATGGGTGGCCAAGTACCCGACCAAACCAATCATCATCAGCGAGTA
CGGGGCAGACACAATGGCGGGACTGCACTCTGTGCTGGGACTGATCTGGAGCGAGGAGTTCCAA
ATCGAGTTGCTGGATGTGTATCATGGGGTGTTCGACCAGTTCAGAAATGTGGTTGGTGAGCATG
TATGGAATTTGCGGGATTTCCAAACAAAGGAGGGCATAACAGCGGGTGGATGGGAACAAGAAGGG
TGTCTTTACCAGAGACCGCAGACCCAAGGGGGCGGCGTTTGCCTTGAGGAAGAGGTGGATGAAT
ATGATGTCGAGTTAG

MRVFPVLSFLSLALI PPSLGVPSPQLRDVELPPTQQALTINLKPQQTSTRDLVSLDGLWSFALE
DATNSTSAPWTAALPKGLECPVPASYNDIFVDRTIHDHVGWVYYQRTVTVPRGWADQRAFLRLE
SATHHGRVYVNEHLVAEHVGGYTPFEADITSLVQPGESFRLTIGVDNQLTHETIPPGDLVTSEY
TGKKQQSYQHDFYNYAGLARSIWLYSVPKDQFIKDITVVPDWDGDGDAETGVVSYTVQTSNATS
GPIRISILDEEGNEVATASGATGTATIPSVNLWQPGAPYLYSFTVSILSASQRLIDTYTLPIGI
RTVAVGNGTILVNNEPVYLTGFGKHEDSPIRGKGHDIAYLVHDFQLLDWIGANSFRTSHYPYAE
EVMEFADRQGILVIDETPAVGLAYSIGAGISTDTSRVTFAPDGINNNTRAHAQALRELIARDK
NHPSVIMWSIANEPASDEPGARAYFEPLTRLARSLDPAHRPITFANLGLATYETDTISDLFDVL
CLNRYFGWYSYTGDLSESAGKALHEELDGWVAKYPTKPII ISEYGADTMAGLHSLVGLIWSEEFQ
IELLDVYHGVFDQFQNVVGEHVWNFADFQTKEGIQRVDGNKKGVFTRDRRPKGAAAFALRKRMN
MMSS

Figure 7A

			Pfam
<i>Caenorhabditis elegans</i>	(1)	-----MILKPTVLLLLLLQSISTITCL	LH
<i>Drosophila melanogaster</i>	(1)	MHLRIRLTCKYEIWALSIFSLVTGLYVLHFSIALILVNKEVPQTRG	MLY
<i>Mus musculus</i>	(1)	-----MSLKWSACWVALGQLLCSALALKGG	MLF
<i>Rattus norvegicus</i>	(1)	-----MSPRRSVCWFVLGQLLCSAVALQGG	MLF
<i>Felis catus</i>	(1)	-----MLRGPAAVWAALGPLLWACGLALRG	MLY
<i>Canis familiaris</i>	(1)	-----MSRGPAGAWVALGPLLWTCGLALEGG	MLY
<i>Cercopithecus aethiops</i>	(1)	-----GLAMAWAVLGPLLWGCALALQGG	MLY
<i>Homo sapiens</i>	(1)	-----MARGSAVAWAALGPLLWGCALGLQGG	MLY
<i>Sulfolobus solfataricus</i>	(1)	-----	
<i>Thermotoga maritima</i>	(1)	-----	MVR
<i>Lactobacillus gasseri</i>	(1)	-----	MESALY
<i>Escherichia coli</i>	(1)	-----	MLR
<i>Staphylococcus sp.</i>	(1)	-----	MLY
<i>Aspergillus nidulans</i>	(1)	-----MRVFPVLSFSLALIPPSLGVPSPQLRDVELPPTQQAALTIN	LK
<i>Penicillium canescens</i>	(1)	-----MKFLTGLSLLSLAA--PSLGTPAARHFPRNEMTQHEQPLIKVR	
<i>Scopulariopsis sp.</i>	(1)	-----MRLSNIPLLRPWAALS LATLIGLS--SGADTDQWKT	LK
<i>Gibberella zeae</i>	(1)	-----	MLR
Consensus	(1)		L L MLY

		02837 →	
<i>Caenorhabditis elegans</i>	(1)	VQKNEIRTVDSLQGLWTFVREPHNGGDVGIVNQNTLDERFQ NATVM	MPV
<i>Drosophila melanogaster</i>	(1)	PRESETREVRSLDGIWNEVRSDQANPTQVRDEWYAKELSKSRPTIP	MPV
<i>Mus musculus</i>	(1)	PKESPSRELKALDGLWHRADLSNNRLOQFEQWYRQPLRESGPTL	MPV
<i>Rattus norvegicus</i>	(1)	PKETPSRELKVLQGLWSEADYSNNRLOQFEKQWYRQPLRESGPTL	MPV
<i>Felis catus</i>	(1)	PRESPSRERKELNGLWSEADFSNRRQFEQWYRTPPLRESGPTL	MPV
<i>Canis familiaris</i>	(1)	PRESPSRERKDLQGLWSEADFSNRRQFEQWYRAPLRESGPTL	MPV
<i>Cercopithecus aethiops</i>	(1)	PRESQSRERKELQGLWSEADFSNRRQFEQWYRRPLRESGPTL	MPV
<i>Homo sapiens</i>	(1)	EQESPSRECKELQGLWSEADFSNRRQFEQWYRRPLWESGPTVD	MPV
<i>Sulfolobus solfataricus</i>	(1)	-MRSFYRPKIDLQGFWKFKIDNEN--TCEENGWYKGLESED----IIYV	
<i>Thermotoga maritima</i>	(1)	PQRNKKRFILINQGVNLEVTSK-----DR--P-----IAV	
<i>Lactobacillus gasseri</i>	(1)	EIQNKYRFNTLMNGTWOQETDPN---SVGLDEGWNKELPDP---EEMPV	
<i>Escherichia coli</i>	(1)	EVEPTPREIKKLQGLWAFSLDREN---CIDQRWESALQES---RAIAV	
<i>Staphylococcus sp.</i>	(1)	PINTETRGVFDLNGVWNEKLDYG---KLEKWKYESKLTDT---ISMAY	
<i>Aspergillus nidulans</i>	(1)	PQQTSTRDLVSLQGLWSEALEDA---TNSTAPWTAALPKG---LECPV	
<i>Penicillium canescens</i>	(1)	PQRTSSRELNVNLDGLWKFALASG---LNDTAQPWTAALPKG---LECPV	
<i>Scopulariopsis sp.</i>	(1)	PQANAIPELLSLDCTWNEALPQSR---EIEEDQGWTSVIPPK---LOIPV	
<i>Gibberella zeae</i>	(1)	PQANRARDLVSLQGVWNEALAKSH---DIETEPAWKKRISPE---LOVEV	
Consensus	(1)	P S SREL LDGLW F D S G E QWY L ES LDMPV	

<i>Caenorhabditis elegans</i>	(75)	PSAYNDLGTGSELRDHIGWVYERKEFEVLRDRNMR--HVLRFGSVNYF	
<i>Drosophila melanogaster</i>	(101)	PASYNDDITTDN-LRDHVGTVWYDRKFFVRSWSKDQ--RIWLRFGSVHYE	
<i>Mus musculus</i>	(80)	PSSFNDITQEAALRDFICWVYERETAILERRWTQD TDMRVVLRINS AHYY	
<i>Rattus norvegicus</i>	(80)	PSSFNDITQEAELRNFGWVYERETAVLPQRWTQD TDRRVVLRINS AHYY	
<i>Felis catus</i>	(80)	PSSFNDVGDQRLRSFVGWVYERETATLPQRWTQD LGTRVVLRIGSAHYY	
<i>Canis familiaris</i>	(80)	PSSFNDVGDQRLRSFVGWVYERETATLPQRWSQDPGTRVVLRIGSAHYY	
<i>Cercopithecus aethiops</i>	(77)	PSSFNDISQDWRLRHFGWVYERETVILPERWTQD LSTRVVLRIGSAHAY	
<i>Homo sapiens</i>	(80)	PSSFNDISQDWRLRHFGWVYERETVILPERWTQD LRTRVVLRIGSAHSY	
<i>Sulfolobus solfataricus</i>	(43)	PASWNEQNPKWD--QFSGIAWYQKDLFVSNDNGNRK--AWMVFEAGYI	
<i>Thermotoga maritima</i>	(33)	PGSWNEQYQDL--CYEEGPFTYKTFYVSKELSQKH---IRLYFAAVNTD	
<i>Lactobacillus gasseri</i>	(50)	PGTFAELTTKRDRKYTGDFWYQKDFISFLKKKE---LYIRFGSVNTHR	
<i>Escherichia coli</i>	(48)	PGSFNDQFADADIRNYACNVWYQREVFIPKQWAG-QR--IVLRFDAVTHY	
<i>Staphylococcus sp.</i>	(47)	PSSYNDDIGVTKEIRNHIGWVYERETVFPAYLKDQR--IVLRFGSATHK	
<i>Aspergillus nidulans</i>	(87)	PASYNDDIFVDRTHDHVGWVYQRTVTVERGAD-QR--AFLRLAESATHH	
<i>Penicillium canescens</i>	(85)	PASYNDDIFISREIHDHVGWVYQREVIWPKGWSQ-ER--YLVRAESATHH	
<i>Scopulariopsis sp.</i>	(81)	PASYNDDIFTDPAIRNNVGWYQRTVHAIVPQTWSE-GR--YYVRFDSVTHE	
<i>Gibberella zeae</i>	(48)	PASYNDDIFADETIRDHVGWVYQRTVAVVRCGVAPQR--VFLRVDAATHH	
Consensus	(101)	PSSFNDI D LR FVGWVYERE VP WSQ VVLR GSA HY	

Figure 7B

<i>Caenorhabditis elegans</i>	(75)	A V V Y I N S E K V T S H I C C H L P F E V D I S A Q I K F G A E N K --- F T V A V N N I L S W S
<i>Drosophila melanogaster</i>	(101)	A Y V W I N G Q K V V K H E M C H L P F E A E V T D L L S Y G A E N R --- I T V M C D N A L I Q T
<i>Mus musculus</i>	(80)	A V V W V N G I H V V E H E C C H L P F E A D I S K L V Q S C P L T T - C R I T I A I N N T L T P H
<i>Rattus norvegicus</i>	(80)	A V V W V N G I H V V E H E C C H L P F E A D I T K L V Q S C P L T T - F R V T I A I N N T L T P Y
<i>Felis catus</i>	(80)	A I V V W N G V H V A E H E C C H L P F E A D I S K L V Q S C P L A S - C R I T I A I N N T L T P H
<i>Canis familiaris</i>	(80)	A I V V W N G V H V A E H E C C H L P F E A D I S K L V Q S C P L S S - C R I T I A I N N T L T P H
<i>Cercopithecus aethiops</i>	(77)	A I V V W N G V H T L E H E C C Y L P F E A D I S N L V Q V C P L S S H V R I T I A I N N T L T S T
<i>Homo sapiens</i>	(80)	A I V V W N G V D T L E H E C C Y L P F E A D I S N L V Q V C P L P S R L R I T I A I N N T L T P T
<i>Sulfolobus solfataricus</i>	(43)	T K L I N G E Y G G T H E C S F T Q F K F P I K L K V N E F N K I V --- V K I D N T P S P Y
<i>Thermotoga maritima</i>	(33)	C E V F L N G E K V G E N H I E Y L P F E V D V T G K V K S G E N E L R --- V V M E N R L K V G
<i>Lactobacillus gasseri</i>	(50)	A K V F I N G H E V G Q H E C G F L P F Q V K I S N Y I N Y D Q T N R --- V I V L V N N E L S E K
<i>Escherichia coli</i>	(48)	G K V V W N N Q E V M E H Q G G Y T P F E A V T P Y V I A G K S V R --- I T V M V N N E L N W Q
<i>Staphylococcus</i> sp.	(47)	A I V Y V N G E L V V E H K C G F L P F E A I T N S L R D C M N R V --- I T V A V D N I L D D S
<i>Aspergillus nidulans</i>	(87)	G R Y V V N E H L V A E H V C G Y T P F E A D I T S L V Q P C E S F R --- L T I G V D N Q L T H E
<i>Penicillium canescens</i>	(85)	G R I Y V N N R L V A E H V C G Y T P F E A D V T E L V A P G E K F R --- L T I G V N N E L T H E
<i>Scopulariopsis</i> sp.	(81)	A K V Y V N D E E V G G H V C G Y T P F E V D L T D L V S P C E Q F R --- L T V A V N N I L T W Q
<i>Gibberella zeae</i>	(48)	G R Y V V N D K F V E H I C G Y T P F E I E L T G L V E P C E S F R --- L T I A V N N Q L T W E
Consensus	(101)	A V V W N G V E H E G G Y L P F E A D I T L V Q G I T I A V N N L T

<i>Caenorhabditis elegans</i>	(169)	I I P Q C D F N Y Q S V A P R N I S G R I L S R L P A G A V K N V G N F D F F N Y A G I L R S V Q L
<i>Drosophila melanogaster</i>	(195)	I I V P Q C --- R I T E V P N D G G M T I V O S --- Y T F D F F N Y A G I H R S V H L
<i>Mus musculus</i>	(179)	T L P P C T I V Y K T D T S M Y P K G Y F V O D --- T S F D F F N Y A G L H R S V V L
<i>Rattus norvegicus</i>	(179)	T L P P C T I V Y K T D P S M Y P K G Y F V O D --- I S F D F F N Y A G L H R S V V L
<i>Felis catus</i>	(179)	T L P P C T I L Y Q T D T S K Y P K G Y F V O N --- I N F D F F N Y A G L H R P V L L
<i>Canis familiaris</i>	(179)	T L P P C T I V Y K T D A S K Y P K G Y F V O N --- T Y F D F F N Y A G L H R P V L L
<i>Cercopithecus aethiops</i>	(177)	T L P P C T I Q Y L T D I S K Y P K G Y F I O N --- T Y F D F F N Y A G L Q R S V L L
<i>Homo sapiens</i>	(180)	T L P P C T I Q Y L T D T S K Y P K G Y F V O N --- T Y F D F F N Y A G L Q R S V L L
<i>Sulfolobus solfataricus</i>	(133)	N L P E A R --- --- D L N N --- A A F D F F N Y G G I H R P V Y I
<i>Thermotoga maritima</i>	(124)	G F P S K V P D S G T H T V G F F G S F P P A N --- F O F E P Y G G I I R P V L I
<i>Lactobacillus gasseri</i>	(144)	A I P C G --- T E E I L D N G Q K L A G P --- Y F D F F N Y S G I M R N V W L
<i>Escherichia coli</i>	(142)	T I P P C --- M V I T D E N C K K K O S --- Y F H D F F N Y A G I H R S V M L
<i>Staphylococcus</i> sp.	(140)	T L P V C --- L Y S E R H E E G L C K V I R N K --- P N F D F F N Y A G L H R P V K I
<i>Aspergillus nidulans</i>	(181)	T I P P C D --- L V T S E Y T C K K Q O S --- Y Q H D F F N Y A G L A R S I W L
<i>Penicillium canescens</i>	(179)	T I P P C K --- I T T G N A T C K R I O T --- Y Q H D F F N Y A G L A R S I W L
<i>Scopulariopsis</i> sp.	(175)	T I P P C --- E V V T N E A C K L R O D --- Y N H D F F N Y A G I A R S V S L
<i>Gibberella zeae</i>	(143)	T I P P C --- R I E A Q S D G S R K O S --- Y Q H D F F N Y A G L A R S V W L
Consensus	(201)	T L P P G T D G V Q F D F F N Y A G L R S V L

		Pfam00703 →
<i>Caenorhabditis elegans</i>	(169)	M K I P - S V Y I Q N I N I V A D H T G S --- F F F E T A V S S L D C --- V R V E
<i>Drosophila melanogaster</i>	(195)	Y T T P - R T F L E E V E V T T N L S K D A T --- V G E V F Y S V S V N G S A A N E A D N V L Q I Q
<i>Mus musculus</i>	(179)	Y T T P - T T Y I D D I T V I T N V E Q D I --- G L V T Y W T S V Q C --- S E H F Q L E
<i>Rattus norvegicus</i>	(179)	Y T T P - T T Y I D D I T V I T D M D R D V --- G L V N Y W T S V Q C --- S D H F Q L E
<i>Felis catus</i>	(179)	Y T T P - T T Y I D D I T I S T S V N Q D T --- G L V D Y Q I F V E C --- G E H F Q L E
<i>Canis familiaris</i>	(179)	Y T T P - T T Y I D D I T V T T G V D Q D T --- G L V D Y Q I F V Q C --- S E H F Q L E
<i>Cercopithecus aethiops</i>	(177)	Y T T P - T A Y I D D I T V T T G V E H D T --- G L V N Y Q I S V K C --- S N L F E L E
<i>Homo sapiens</i>	(180)	Y T T P - T T Y I D D I T V T T S V E Q D S --- G L V N Y Q I S V K C --- S N L F K L E
<i>Sulfolobus solfataricus</i>	(133)	E F V D - E C H V E D I T V Y T K S Y G H L K --- V E I L S E C N Q R --- F S L R
<i>Thermotoga maritima</i>	(124)	E F I D - H A R I L D I W D I S E S E P E K - K L G K V K V D E M S E E A V G --- Q E M T
<i>Lactobacillus gasseri</i>	(144)	L A L P - Q S Q I T N F K L N Y Q L A N N --- K A T I T N I E A N N --- N A E F K
<i>Escherichia coli</i>	(142)	Y T T P - N T W V D D I T V V T H A Q D C N --- H A S V D W Q V V A N C D V S ---
<i>Staphylococcus</i> sp.	(140)	Y T T P - F T Y V E D I S V T D F N G P T --- G T V T Y T V D F Q C --- K A E T V K
<i>Aspergillus nidulans</i>	(181)	Y S V P - K D Q F I K D I T V V P D V D W D G D A E T G V S Y T V Q T S N A T --- S G P I R
<i>Penicillium canescens</i>	(179)	Y S V P - Q Q H T Q D I T V V T D V D G D --- N G L I N Y E V E V A N Q T --- T G Q I Q
<i>Scopulariopsis</i> sp.	(175)	Y S V P - D V H V S D V I V T T E N D D E G N --- E G T V N Y S V E T S C S N --- D T Q A R
<i>Gibberella zeae</i>	(143)	Y S V P - K V F I N D I S V G T D L L G D G --- T G I V E F D I R T S G E L Q A --- D A R W R
Consensus	(201)	Y T T P T Y I D D I T V T V D G L V Y I V G L

Figure 7C

<i>Caenorhabditis elegans</i>	(255)	V K M F D G E C S L V Y T G N Q T K - - - S E G Q I S N P K L W P R G - - M G K P D L Y S L E V S
<i>Drosophila melanogaster</i>	(280)	A N I Y D K D G I L V A N A T S D Q K L G G K L Q M N P V K P W W P Y L M H S E P G Y L Y Q L E I K
<i>Mus musculus</i>	(259)	V Q L L D E D E C K V V A H G T C N Q - - - C O L Q V P S A N L W P Y L M H E H P A Y M S L E V K
<i>Rattus norvegicus</i>	(259)	V R L L D E D E C K I V A R G T C N E - - - C O L K V P R A H L W P Y L M H E H P A Y L Y S L E V T
<i>Felis catus</i>	(259)	V R L L D E E C K V V A Q G T C G R - - - C O L Q V P N A H L W P Y L M H E H P A Y L Y S L E V R
<i>Canis familiaris</i>	(259)	V Y L L D E E C K V V A Q G T C S Q - - - C R L Q V P N V H L W P Y L M H E H P A Y L Y S L E V R
<i>Cercopithecus aethiops</i>	(257)	V R L L D A E N K L V A N G T C I Q - - - C O L K V E G A R L W P Y L M H E R P A Y L Y S L E V R
<i>Homo sapiens</i>	(260)	V R L L D A E N K V V A N G T C T Q - - - C O L K V E G V S L W P Y L M H E R P A Y L Y S L E V Q
<i>Sulfolobus solfataricus</i>	(196)	F K L V D K E G R V I L N E E S S N E - V F E K D M N N V I P W S E - - - - - D N P Y L Y T L I V E
<i>Thermotoga maritima</i>	(206)	I K L G E E E K K - - - I R T S N R F V E G E F I L E N A R F W S L - - - E D - - P Y L Y P L K V E
<i>Lactobacillus gasseri</i>	(216)	V T L F D N Q K E V A C A T S K N T - - - S S L T I K N P H L W S E N - - - - - D P Y S Y K I K I E
<i>Escherichia coli</i>	(214)	V E L R D A D Q Q V A T G Q T S - - - C T L Q V N P H L W P - - - - - G - E G Y L Y E L C V T
<i>Staphylococcus sp.</i>	(217)	V S V V D E E C K V V A S T E C L S - - - C N V E I P N V I L W E P - - - - - L N T Y L Y Q I K V E
<i>Aspergillus nidulans</i>	(261)	I S I L D E E C N E V A T A S C A T - - - C T A T I P S V N L W Q P - - - - - G - A P Y L Y S F T V S
<i>Penicillium canescens</i>	(254)	I S V I D E D C A I V A K A S C A Q - - - C T V T I P S V K L W Q P - - - - - G - A A Y L Y Q L Q V N
<i>Scopulariopsis sp.</i>	(251)	V T L I D E D C N E V A E A S E L E - - - G S L N V S P V N L W Q P - - - - - G - A A Y L Y T L R V E
<i>Gibberella zeae</i>	(220)	I L L D E E D A T V C Q A Q E S H - - - C K L E V K N A K Y N A P - - - - - G - A A Y L Y Q L R A Q
Consensus	(301)	V L L D E E G K V V A G T G G L V P N L W P A Y L Y S L V

			Pfam02836 →
<i>Caenorhabditis elegans</i>	(255)	L I L D G - - - E L A D I M R E Q F G F R T V T W S D S Q I F E N S K P F Y C L G F G M H E D F E I	
<i>Drosophila melanogaster</i>	(280)	L L A T N D - - E L L D V M R L K V G I R T L S W N S Q O F L I N G K P V Y F R G F G R H E D S D I	
<i>Mus musculus</i>	(259)	V T T T E S - - - V T D Y T L P V G I R T V A V T K S K F L I N G K P F Y F Q G V N K H E D S D I	
<i>Rattus norvegicus</i>	(259)	M T T P E S - - - V S D F Y T L P V G I R T V A V T K S K F L I N G K P F Y F Q G V N K H E D S D I	
<i>Felis catus</i>	(259)	L T A Q T A A G S V S D F Y T L P V G I R T V A V T E H O F L I N G K P F Y F H G V N K H E D A D I	
<i>Canis familiaris</i>	(259)	L T A Q M A A G P V S D F Y T L P V G I R T V A V T E R O F L I N G K P F Y F H G V N K H E D A D I	
<i>Cercopithecus aethiops</i>	(257)	L T A Q T S L G P V S D F Y T L P V G I R T V A V T E S O F L I N G K P F Y F H G V N K H E D A D I	
<i>Homo sapiens</i>	(260)	L T A Q T S L G P V S D F Y T L P V G I R T V A V T K S O F L I N G K P F Y F H G V N K H E D A D I	
<i>Sulfolobus solfataricus</i>	(196)	M Y V G G N - - - L K D S V Y E R I C F R D M E N K D G K I Y L N G K P I F L K G F G R H E D F P I	
<i>Thermotoga maritima</i>	(206)	L E K - - - - - D E Y T L D I G I R T I S W D E K R L Y L N G K P V F L K G F G K H E E F P V	
<i>Lactobacillus gasseri</i>	(216)	M L E D G - - - K T V D E Y T D K I G I R T V K I V N D K I L N N H P I L K G F G K H E D F N V	
<i>Escherichia coli</i>	(214)	A K S - - - - Q T E C D I M P L R V G I R S V A N K G E O F L I N H K P F Y F T G F G R H E D A D L	
<i>Staphylococcus sp.</i>	(217)	L V N D G - - - L T I D V Y E E F G V R T V E V N D G K F L I N N K P F Y F K G F G K H E D T P I	
<i>Aspergillus nidulans</i>	(261)	I L S A - S - Q R L I D T Y T L E I G I R T V A V G N G T I L V N N E P V Y L T G F G K H E D S P I	
<i>Penicillium canescens</i>	(254)	I V G S - S - G D V V D T Y N L A T G V R T V K V A G S O F L I N G K P F Y F T G F G K H E D T A V	
<i>Scopulariopsis sp.</i>	(251)	L L S - - - D - D T V V D T Y D L P V G V R S V R V E G N O F L I N G K P F Y F T G F G K H E D S P V	
<i>Gibberella zeae</i>	(220)	L V R G E H - D E I L D T Y N L A V G I R S V E I R D G R F F I N G K P F Y F T G F G K H E D G P V	
Consensus	(301)	L V D Y T L P V G I R T V A V Q F L I N G K P F Y F G F G K H E D A D I	

		Signature1
<i>Caenorhabditis elegans</i>	(347)	I G R G F N Q A I M T K D L N L L E M M C G N C Y R T H Y P Y S E E R M F E N D R G I A V I V E
<i>Drosophila melanogaster</i>	(378)	R G K G L D N A L M V R D F N L L K W I G A N A Y R T S H Y P Y S E E S M Q F A D E H G I M I I D E
<i>Mus musculus</i>	(353)	R G K G F D W P L L V K D F N L L R L L C A N S F R T S H Y P Y S E E V L Q L C D R Y G I V V I D E
<i>Rattus norvegicus</i>	(353)	R G R G F D W P L L I K D F N L L R L L C A N S F R T S H Y P Y S E E V L Q L C D R Y G I V V I D E
<i>Felis catus</i>	(356)	R G K G F D W P L L V K D F N L L R L L C A N A F R T S H Y P Y A E E V M Q L C D R Y G I V V I D E
<i>Canis familiaris</i>	(356)	R G K G F D W P L L V K D F N L L R L L C A N A F R T S H Y P Y A E E V M Q L C D R Y G I V V I D E
<i>Cercopithecus aethiops</i>	(354)	R G K G F D W P L L V K D F N L L R L L C A N A F R T S H Y P Y A E E V L Q M C D R Y G I V V I D E
<i>Homo sapiens</i>	(357)	R G K G F D W P L L V K D F N L L R L L C A N A F R T S H Y P Y A E E V M Q M C D R Y G I V V I D E
<i>Sulfolobus solfataricus</i>	(287)	L C K F T Y G A V L R D E Y L M R K I C A N S F R T S H Y P Y S N E H L D L A D E M G F L V I L E
<i>Thermotoga maritima</i>	(290)	L G Q C T F Y P L M I K D F N L L K W I G A N S F R T S H Y P Y S E E W L D L A D R L G I L I V I D E
<i>Lactobacillus gasseri</i>	(305)	L G K A V N E S I I K R D Y E C M K W I G A N C F R S S H Y P Y A E F W Y Q A D K Y G F L I I D E
<i>Escherichia coli</i>	(302)	R G K G F D N V L M V H D H A L M D W I G A N S Y R T S H Y P Y A E E M L D W A D E H G I V V I D E
<i>Staphylococcus sp.</i>	(306)	N G R G F N E A S N V M D F N I L K W I G A N S F R T A H Y P Y S E E L M R L A D R E G L V V I D E
<i>Aspergillus nidulans</i>	(351)	R G K G H D I A Y L V H D F O L L D W I G A N S F R T S H Y P Y A E E V M E F A D R Q G I L I V I D E
<i>Penicillium canescens</i>	(344)	R G K G H D P A Y M V H D F O L M K W I G A N S F R T S H Y P Y A E E V M D F A D R N G I V V I D E
<i>Scopulariopsis sp.</i>	(340)	R G K G Y D P A Y M I H D F E L M K W I G A N S F R T S H Y P Y A E E V M E Y A D R H G I V V I D E
<i>Gibberella zeae</i>	(311)	R G R G Y D A S Y M I H D Y R L M K W I G A N S F R T S H Y P Y A E E V L E Y A D R H G V V I N E
Consensus	(401)	R G K G F D A L L V K D F N L L K W I G A N S F R T S H Y P Y A E E V M L A D R Y G I V V I D E

Figure 7D

<i>Caenorhabditis elegans</i>	(347)	TPAVGLKGFSGKANN-----NLHVKMLQDMIDRDKN
<i>Drosophila melanogaster</i>	(378)	CP---SVDTENFSQ-----ELLGKHKSSLEQLTHRDRN
<i>Mus musculus</i>	(353)	CPGVCIVLPQSFGN-----ESLRHLELVMEELVVRDKN
<i>Rattus norvegicus</i>	(353)	CPGVCIVLPQSFGN-----VSLRHLELVMEELVVRDKN
<i>Felis catus</i>	(356)	SPGVCIVLVESYSN-----VSLQHLELVMEELVVRDKN
<i>Canis familiaris</i>	(356)	SPGVCIMLVQSYSN-----VSLQHLELVMEELVVRDKN
<i>Cercopithecus aethiops</i>	(354)	CPGVGLALPQFFNN-----VSLQNMVRVMEELVVRDKN
<i>Homo sapiens</i>	(357)	CPGVGLALPQFFNN-----VSLHHEIMQVMEELVVRDKN
<i>Sulfolobus solfataricus</i>	(287)	PPLCYSNISRVMSQEE-----IAKMFGDVKYFEKVRDTIKEMIRQHKN
<i>Thermotoga maritima</i>	(290)	APHVGIITRYH-----YN-----PETQKIAEDNIRRMIDRHKN
<i>Lactobacillus gasseri</i>	(305)	VEAVGLNRSITNFLNVTNSNQSHFFASKTVPELKKVIEQEIKEMIDRDQR
<i>Escherichia coli</i>	(302)	TAAVGFNLSLGIGFEAGNPKPKELYSEEAVNGETQQAHLQAIKELIARDKN
<i>Staphylococcus</i> sp.	(306)	TPAVGVHLNFMATTGLGEGSE--RVSTWEKIRTFEHLQDVLRELVRDKN
<i>Aspergillus nidulans</i>	(351)	TPAVGLAYSIGAGISTDTSRV-TFAPDGINNNTRAAHAQALRELIIARDKN
<i>Penicillium canescens</i>	(344)	TPAVGLNIAL-MGVSESGAPQ-TFTPDAINDKTQEAHKQAIRELIIARDKN
<i>Scopulariopsis</i> sp.	(340)	VAAVGLNLGISAGLRGDEPPK-TFTEDKVNNETQKTHAQALRELIIARDKN
<i>Gibberella zeae</i>	(311)	TAAVGLNLNIVSGMFGNKQLA-TFSPDTMSSKTQASEEQAIRELIISRDKN
Consensus	(401)	PAVGL L N T H IRELI RDKN

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		Signature2
<i>Caenorhabditis elegans</i>	(427)	HPSVIAWLANEPTMTKKESRNYFKTLVDTAHGIDR-TRPVITMYGP-T-
<i>Drosophila melanogaster</i>	(458)	HPSVVMWSIANEPTGTSGVSADSYFELVANFERSLDK-TRPIIAAIAV---
<i>Mus musculus</i>	(436)	HPAVVMWSVANEPSSALKPAAYYFKTLITHKALDL-TRPVTFVSNANA---
<i>Rattus norvegicus</i>	(436)	HPAVVMWSVANEPVSSLKPAAGYFKTLIAHTKALDE-TRPVTFVSNNT---
<i>Felis catus</i>	(439)	HPAVVMWSVANEPASFLKPAAGYFKTLIAHTKALDE-SRPVTFVNSNT---
<i>Canis familiaris</i>	(439)	HPSVVMWSVANEPISFLKPAAYYFKTLIAHTKALDE-SRPVTFVNSNT---
<i>Cercopithecus aethiops</i>	(437)	HPAVVMWSVANEPASHLESAGYLLKMWIHTKALDE-SRPVTFVNSNT---
<i>Homo sapiens</i>	(440)	HPAVVMWSVANEPASHLESAGYLLKMWIAHTKSLDE-SRPVTFVNSNT---
<i>Sulfolobus solfataricus</i>	(380)	RPSVIMYSVMNEPSPDIREVAEFIRREVELFKSLDS-SRPVTFASHR---
<i>Thermotoga maritima</i>	(372)	HPSVIMWSVANEPESNHPDAEGFPKALYETANEMOR-TRPVVMMSMDAP
<i>Lactobacillus gasseri</i>	(405)	HPSVIAWLSLNEPESTTQESYDYFKDIFAFARKLDEQNRPIVIGTLVMGS-
<i>Escherichia coli</i>	(402)	HPSVVMWSIANEEDTRPQAGREYFAPDAEATRKLDL-TRPIITCVNVMFC-
<i>Staphylococcus</i> sp.	(404)	HPSVVMWSIANEAATEEEGAYEYFKPLVELTKELDEQKRPVTIIVLFVMA-
<i>Aspergillus nidulans</i>	(450)	HPSVIMWSIANEPASDEPGARAYFEPLTRLARSLDEAHRPITFANLGLA-
<i>Penicillium canescens</i>	(442)	HASVVMWSIANEPASHEDGAREYFEPLTNLRQLDETR-PIITFANVGTA-
<i>Scopulariopsis</i> sp.	(439)	HASVVSICVTNEPASAEDGAREYFQPLVELTRELDE-TRPVTFETNMVGA-
<i>Gibberella zeae</i>	(410)	HPCVVMWMLANEFGASEQGSREYFEPLVTLARSLDSQKRPVCMCYSHMHS-
Consensus	(501)	HPSVVMWSVANEP S A YFK LI TKALDP TRPVTFV

<i>Caenorhabditis elegans</i>	(427)	-NFDNDQTDALDMDFICVNRYYGWYIDMG-YIPWINQSVYWDISLWRETFH
<i>Drosophila melanogaster</i>	(458)	-SNTQDKAGRSLDIISFNRYNAWYSNAG-RIDMITQNVIDEAIAWNKRYN
<i>Mus musculus</i>	(436)	-KYDADLGAPYVDVICVNSYFSWYHDYG-HLEVIQPOLNSQFENWYKTHQ
<i>Rattus norvegicus</i>	(436)	-RYDADMGAPYVDVICVNSYLSWYHDYG-HLEVIQLOLTSQFENWYKMYQ
<i>Felis catus</i>	(439)	-NYEADLGAPYVDVICVNSYYSWYHDYG-HMEVIQLOLATQFENWYRTYQ
<i>Canis familiaris</i>	(439)	-NYEADLGAPYVDVICVNSYYSWYHDYG-HMEVIQLOLATFENWYRTYQ
<i>Cercopithecus aethiops</i>	(437)	-NYAADKGAPYVDVICLNSYYSWYHDYG-HLELIQROLTTQFENWYKTYQ
<i>Homo sapiens</i>	(440)	-NYAADKGAPYVDVICLNSYYSWYHDYG-HLELIQLOLATQFENWYKMYQ
<i>Sulfolobus solfataricus</i>	(380)	--SVRLALEYVDVITSLNYYHGWYTEWG-DIDSGVKVVAILEEIHKKFP
<i>Thermotoga maritima</i>	(372)	DERTROVALKYFDIVGVNRYGWIYQGR-RIEGLQALEKDEELYARHR
<i>Lactobacillus gasseri</i>	(405)	-GPKVDKLHPLCDFVCLNRYGWIYVAGGPEIVNAKKMLEDELDGWNLKL
<i>Escherichia coli</i>	(402)	-DAHTDTISDLFDVLCNRYGWIYVQSG-DLETAEKVLEKELLAWQEKLH
<i>Staphylococcus</i> sp.	(404)	-TPETDKVRELIDVIALNRYGWIYFDGG-DLEAAKVHLRQEFHAWNKRCP
<i>Aspergillus nidulans</i>	(450)	-TYETDTISDLFDVLCNRYGWIYSYTG-DLESAGKALHEELDGWVAKMP
<i>Penicillium canescens</i>	(442)	-TYQLDRISDLFDVSCINRYGWIYSQTG-DLEAEAALEKELHGWQEKFH
<i>Scopulariopsis</i> sp.	(439)	-TVDKCLISDLFDVLSINRYGWIYVQTC-DLESAEVAMEEELLQWVDEYD
<i>Gibberella zeae</i>	(410)	-KPDTRIDALFDVVCNRYGWIYQTG-NLKAAEVALAEELRSWQEAHA
Consensus	(501)	YD D GA VDVICLNRYGWIY D G LE A L ELEW K Y

Figure 7E

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<i>Caenorhabditis elegans</i>	(522)	-KPIITVTEYCADSIPGLNQEEVSVDPSSEYQNEVIQETTHAFDALVKDHTI
<i>Drosophila melanogaster</i>	(552)	-KPIITMSEYCADTLEGLFMQPAYVWSEEFOTEVFSRHFKAFFELRKKGW
<i>Mus musculus</i>	(530)	-KPIITQSEYCADAIPIGFIHEDPERMPSSEYQKAVLENYHSVLDQKRKE-YV
<i>Rattus norvegicus</i>	(530)	-KPIITQSEYCADAVSGLIEDPERMPSSEYQKAVLENYHSVLDQKRKE-YV
<i>Felis catus</i>	(533)	-KPIITQSEYCADTIAGFHDQDPELMPSSEYQKGLLEQYMLVLDQKRKE-YV
<i>Canis familiaris</i>	(533)	-KPIITQSEYCAETIAGFHDQDPELMPSSEYQKGLLEQYMLVLDQKRKE-YV
<i>Cercopithecus aethiops</i>	(531)	-KPIITQSEYCAETIVCFHDQDPELMPSSEYQKSLLEQYMLVLDQKRKE-YV
<i>Homo sapiens</i>	(534)	-KPIITQSEYCAETIAGFHDQDPELMPSSEYQKSLLEQYMLVLDQKRKE-YV
<i>Sulfolobus solfataricus</i>	(473)	EKPIITITEFGADAIYGLHSDPFQMWSEYQSEMIKRYIEALREKDYI---
<i>Thermotoga maritima</i>	(470)	-KPIIFVTEFGADAIACIHYDPEQMPSEYQAELEVEKTIRLLLLKKDYI---
<i>Lactobacillus gasseri</i>	(503)	NKPFVVFTEFGADTLSSSERLEDEMWSQSEYQNEYEQMFDIFKKYPFI---
<i>Escherichia coli</i>	(498)	-QPIITITEYGVDTLACGLHSMYTDWSEYQCAWLDMMIRVDFRVSFSAV---
<i>Staphylococcus sp.</i>	(501)	GKPIITITEYGVDTLACGLHSMYTDWSEYQCAWLDMMIRVDFRVSFSAV---
<i>Aspergillus nidulans</i>	(547)	TKPIITISEYCADTMAGLHSLVGLIWSSEYQFOIELDVMHGVDFDQFQNV---
<i>Penicillium canescens</i>	(538)	-RPIIVMTEYCADTLACGLHSLVGLIWSSEYQFOIELDVMHGVDFDQFQNV---
<i>Scopulariopsis sp.</i>	(535)	-KPIITMSEYCADTLACGLHSLVGLIWSSEYQFOIELDVMHGVDFDQFQNV---
<i>Gibberella zeae</i>	(507)	AKPIITMTEYGVDTLACGLHSLVGLIWSSEYQFOIELDVMHGVDFDQFQNV---
Consensus	(601)	KPIITISEYCADTIAGLH DPPLMFSEYQ LLE YH VFD

<i>Caenorhabditis elegans</i>	(522)	TCEMIWNFADFMT-GMTTTRAVGNHKGVFTRSRQAKIAAYTLNRYLKKG
<i>Drosophila melanogaster</i>	(552)	IGEFVWNFADFMT-AQSYTRVCGNKKGVFTRAROPKAAHLLRKRYPFALG
<i>Mus musculus</i>	(530)	VGELIWNFADFMT-NQSPLRVIGNKKGVFTRAROPKTSAILRERYWRIA
<i>Rattus norvegicus</i>	(530)	IGELIWNFADFMT-NQSPLRVIGNKKGVFTRAROPKTSAILRERYWRIA
<i>Felis catus</i>	(533)	VGELIWNFADFMT-NQSPQRYMGNKKGVFTRAROPKGAAPLLRERYWKLA
<i>Canis familiaris</i>	(533)	VGELIWNFADFMT-DQSPQRAVGNRKGIFTRAROPKGAAPLLRERYWKLA
<i>Cercopithecus aethiops</i>	(531)	VGELIWNFADFMT-EQSPTRVLGNKKGVFTRAROPKSAAPLLRERYWKIA
<i>Homo sapiens</i>	(534)	VGELIWNFADFMT-EQSPTRVLGNKKGVFTRAROPKSAAPLLRERYWKIA
<i>Sulfolobus solfataricus</i>	(473)	VGFHIWNFADFRT-PQNPSTILNRKGIFTRDRQPKLAAPVVEELFKNKL
<i>Thermotoga maritima</i>	(470)	IGTHVWAFADFMT-PQNVRRPILNHKGVFTRDRQPKLVAVHVLRLWSEV-
<i>Lactobacillus gasseri</i>	(503)	CGELVWNFADFMT-SEGIMRVCGNKKGVFTRDRQPKDIAETLKKRWQQLN
<i>Escherichia coli</i>	(498)	VGEQVWNFADFAT-SQGIIRVCGNKKGVFTRDRQPKSAAPLLQKRWGTGMN
<i>Staphylococcus sp.</i>	(501)	VGEQAWNFAADFAT-SQGVMRVCGNKKGVFTRDRQPKLAAPVFRERWTNIP
<i>Aspergillus nidulans</i>	(547)	VGEHVWNFAADFQT-KEGIQRVDCGNKKGVFTRDRQPKGAAPALRRWMMNM
<i>Penicillium canescens</i>	(538)	AGEHVWNFAADFQT-NLGIIRVDCGNKKGVFTRDRQPKAAHSLRWRWTSID
<i>Scopulariopsis sp.</i>	(535)	VGEHVWNFAADFQT-PHTGVNRVDCGNKKGVFTRDRQPKAAHSLRWRWTSID
<i>Gibberella zeae</i>	(507)	VGEHVWNFAADFQT-SAMIIRVDCGNKKGVFTRDRQPKAAHSLRWRWTSID
Consensus	(601)	VGE IWNFADF T Q RV GNKKGVFTRDRQPK AAFLLR RW IA

<i>Caenorhabditis elegans</i>	(620)	SNIDTTIWT-----
<i>Drosophila melanogaster</i>	(650)	RDLDQCSFPEDLFTYIADLIS-
<i>Mus musculus</i>	(627)	NETGGHSGSPRTQCFGSRPFTF
<i>Rattus norvegicus</i>	(627)	NETRGYGSVPRTQCMGSRPFTF
<i>Felis catus</i>	(630)	NETRYPWSAVKSQCLENSPFTL
<i>Canis familiaris</i>	(630)	NETGHRSAAKSQCLENSPFAL
<i>Cercopithecus aethiops</i>	(628)	NETRYPHSIAKSQCLENSPFT-
<i>Homo sapiens</i>	(631)	NETRYPHSVAKSQCLENSPFT-
<i>Sulfolobus solfataricus</i>	(569)	RS-----
<i>Thermotoga maritima</i>	(564)	-----
<i>Lactobacillus gasseri</i>	(599)	-----
<i>Escherichia coli</i>	(593)	FGEKPQQGGKQ-----
<i>Staphylococcus sp.</i>	(597)	DFGYKN-----
<i>Aspergillus nidulans</i>	(643)	SS-----
<i>Penicillium canescens</i>	(633)	KN-----
<i>Scopulariopsis sp.</i>	(631)	FPKLGNGTSGA-----
<i>Gibberella zeae</i>	(603)	GPRKIEVTKQ-----
Consensus	(701)	

Figure 8

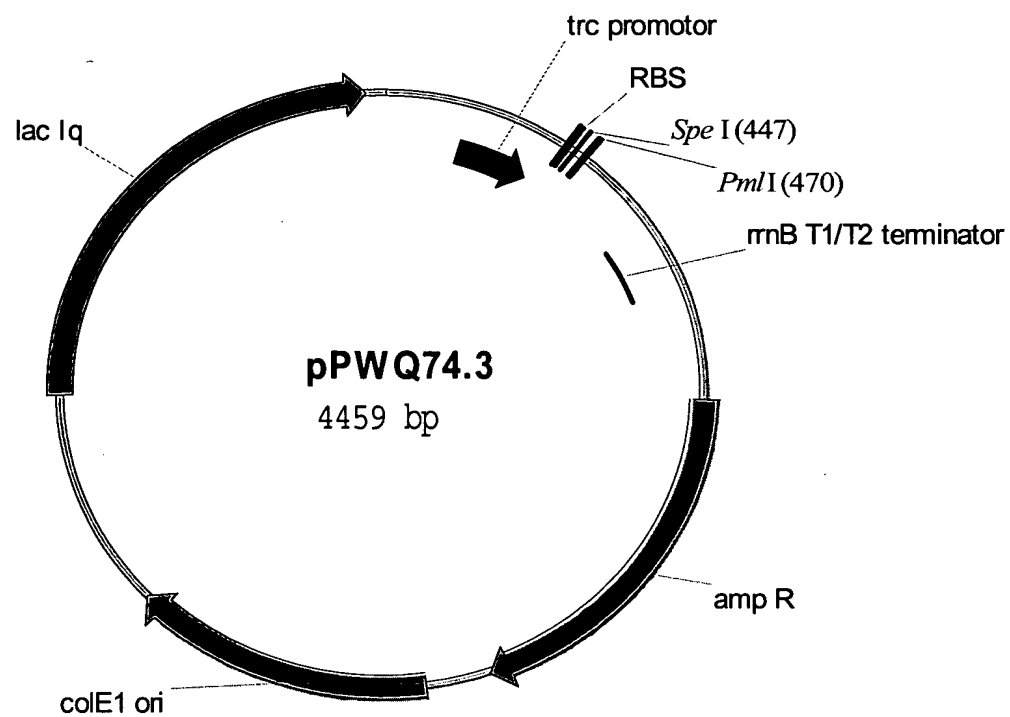


Figure 9

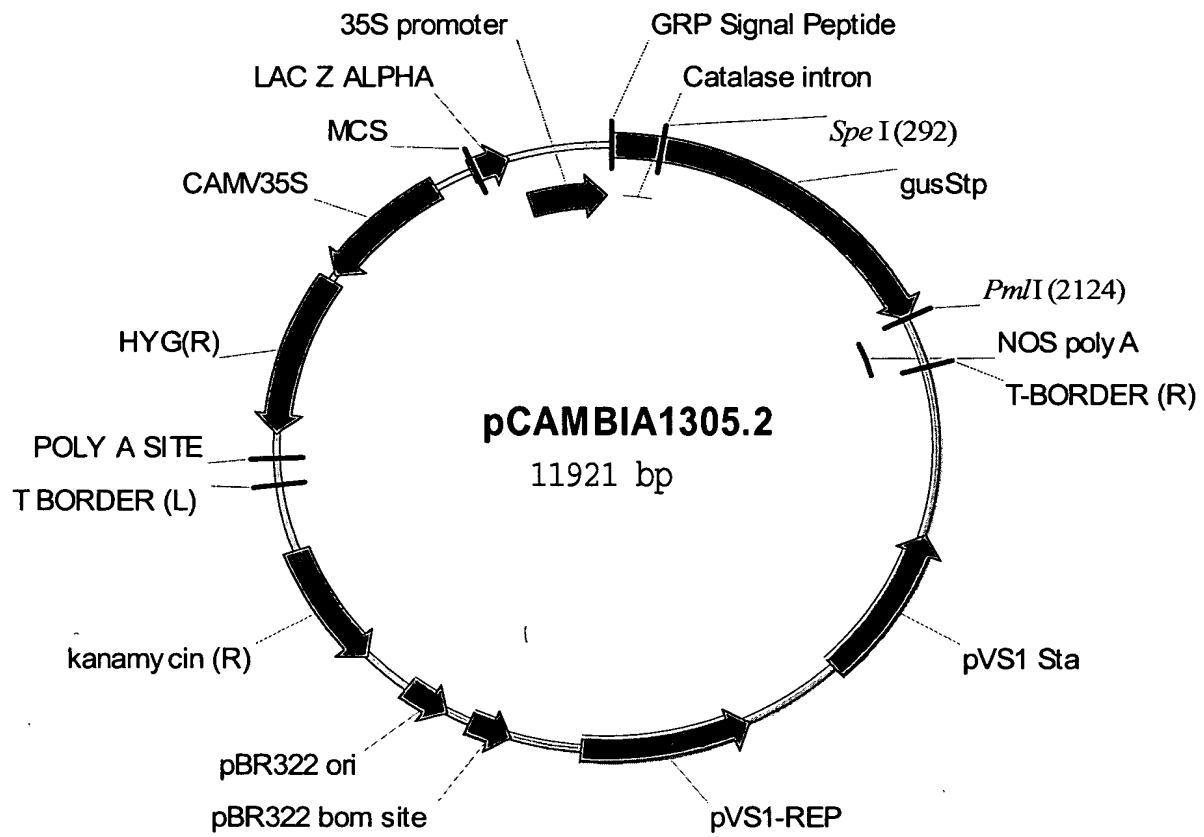


Figure 10A

β -Glucuronidase activity in leaves of rice T1 plants transformed with pPWT9.17

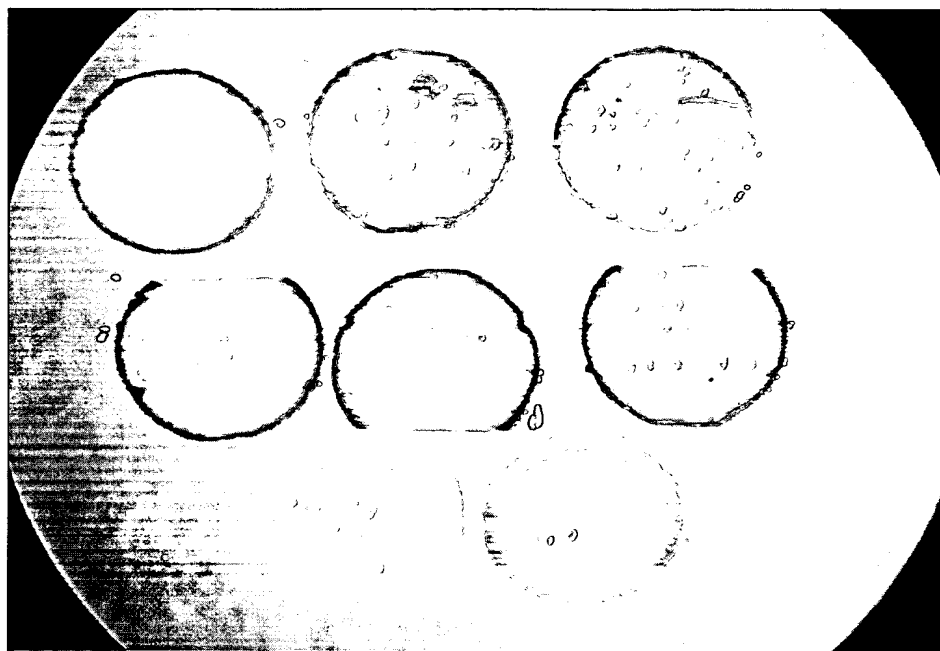


Figure 10B

Secreted β -glucuronidase activity in leaves of rice T1 plants transformed with pKKWA68.4 and pPWT9.17

pCAMBIA1305.2 pKKWA68.4 pPWT9.17

